

Year Ten Advanced Homework Term 4, Sheet 5

Name: _____

Due Date: _____

1. List the sample space for

a) rolling a ten-sided die

b) the sexes of children in a three-child family

2. Write down an event whose probability is impossible or zero.

3. If a letter is chosen at random from the word

ARCARNACONA

What is the probability it is a:

a) a vowel

b) a vowel or a consonant

c) an E

d) an A

4. Draw a tree diagram to show the sample space for a family with four children (assume all single births).

5. Using your tree diagram in Q4 answer the following

a) $\Pr(\text{no girls}) =$

b) $\Pr(\text{only 1 boy}) =$

c) $\Pr(\text{exactly 2 boys}) =$

d) $\Pr(\text{at least 1 girl}) =$

e) $\Pr(\text{a girl before any boys}) =$

f) $\Pr(\text{more girls than boys}) =$

6. In a group of 30 students, 9 play hockey and softball. 14 play only softball and 4 play no sport at all. Using the letter H and S to represent Hockey and Softball, draw a Venn diagram

7. Answer the following questions using the above Venn diagram:

a) $\Pr(H) =$

b) $n(S) =$

c) $n(\varepsilon) =$

d) $\Pr(S \cap H) =$

e) $\Pr(S \cup H) =$

f) $\Pr(H') =$